OVERALL PROJECT REQUIREMENTS

NOTES	
1	ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH ALL DRAWINGS AND SPECIFICATIONS CONTAINED HEREIN.
2	ALL WORK RELATED TO THE STAGING, CONSTRUCTION PRACTICES, AND SAFETY OF THE PROJECTS WORKERS AND PROPERTY SHALL BE CONSIDERED MEANS AND METHODS AND SHALL BE COMPLETED BY THE CONTRACTOR IN ACCORDANCE WITH STANDARD INDUSTRY PRACTICE AND ALL CODES AND STANDARDS. VISITS TO THE SITE MADE BY THE ENGINEER ARE FOR THE REVIEW OF THE STRUCTURAL WORK FOR GENERAL CONFORMANCE WITH THE DRAWINGS AND SPECIFICATIONS AND ARE NOT FOR THE REVIEW OF CONTRACTOR RESPONSIBILITIES, INCLUDING BUT NOT LIMITED TO PROJECT SAFETY AND MEANS AND METHODS OF CONSTRUCTION.
3	ALL DRAWINGS HAVE BEEN PREPARED IN ACCORDANCE WITH THE 2015 INTERNATIONAL BUILDING CODE, AS WELL AS ALL REFERENCED STANDARDS CONTAINED THEREIN.
4	EVALUATION AND COMPLIANCE WITH LOADING RESTRICTIONS FOR MEANS AND METHODS OF CONSTRUCTION AS WELL AS STAGING FOR OTHER TRADES ARE THE RESPONSIBILITY OF THE CONTRACTOR.
5	ALL WORK SHALL BE INSPECTED IN ACCORDANCE WITH CHAPTER 17 OF THE REFERENCED BUILDING CODE. SUBMIT ALL REPORTS TO THE ENGINEER OF RECORD FOR REVIEW. AT THE COMPLETION OF THE PROJECT, THE SPECIAL INSPECTION REPORT SHALL BE COMPLETED, SIGNED BY THE SPECIAL INSPECTOR, AND SUBMITTED TO THE ENGINEER OF RECORD FOR RECORD PURPOSES.
6	SCALING OF DRAWINGS TO DETERMINE DIMENSIONS OF ELEMENTS IS NOT PERMITTED.
7	STRUCTURAL DRAWINGS SHALL NOT BE REPRODUCED TO CREATE SHOP DRAWINGS OR SHORING DOCUMENTATION WITHOUT THE EXPRESS WRITTEN CONSENT OF MACINTOSH ENGINEERING.
8	ALL HORIZONTAL AND VERTICAL DIMENSIONS CONTAINED ON THE STRUCTURAL DRAWINGS WERE DEVELOPED BY OTHER DISCIPLINES FOR THE PURPOSE OF THIS PROJECT. ANY DIMENSIONS NOT SHOWN ON THE STRUCTURAL DRAWINGS SHOULD BE COORDINATED WITH THE OTHER DISCIPLINE DRAWINGS.
9	THE STRUCTURAL DOCUMENTS ARE TO BE USED IN COORDINATION WITH THE ARCHITECTURAL, MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS AND SPECIFICATIONS AS WELL AS THOSE OF ALL OTHER DISCIPLINES. ANY DISCREPANCIES SHOULD BE BROUGHT TO THE ATTENTION OF THE DESIGN TEAM PRIOR TO THE COMMENCEMENT OF WORK.
10	ALL REQUESTED CHANGES IN WORK BY THE CONTRACTOR ARE SUBJECT TO THE APPROVAL OF THE DESIGN TEAM AND OWNER AND ARE CONSIDERED TO BE COMPLETED AT NO ADDITIONAL COST UNLESS SPECIFICALLY APPROVED. APPROVAL OF REQUESTED CHANGES DOES NOT CONSTITUTE APPROVAL OF AN INCREASE IN PROJECT COSTS.

SHOP DRAWING REQUIREMENTS

NOTES	
1	SHOP DRAWINGS SHALL BE SUBMITTED FOR THE FOLLOWING ITEMS FOR THIS THE PROJECT:
1.1	CONCRETE MIX DESIGNS INCLUDING ALL LABORATORY TESTING, MATERIALS, ETC.
1.2	REINFORCING SHOP DRAWINGS
1.3	ANCHOR BOLT AND CONCRETE EMBEDDED ASSEMBLIES
1.4	STEEL FRAMING
1.5	HELICAL PILE ANCHORS

FOUNDATIONS

NOTES	
1	PERFORM ALL FOUNDATION PREPARATION, EXCAVATION, PLACEMENT OF STRUCTURAL FILL AND / OR SOIL IMPROVEMENT WORK IN STRICT ACCORDANCE WITH THE GEOTECHNIAL EVALUATION AS PREPARED BY GEO-TECHNOLOGY ASSOCIATES (PROJECT NO. 170072, DATED FEBRUARY 28, 2017)
2	BOTTOM OF ALL FOOTINGS SUBJECTED TO FREEZE THAW CONDITIONS SHALL BE A MINIMUM 32 INCHES BELOW FINISH GRADE OR TOP OF SLAB ELEVATION WHICHEVER IS LOWER
3	ALL STEEL HELICAL PILES SHALL BE AS SPECIFIED IN THE GEOTECHNICAL REPORT AND SHALL BE CAPABLE OF SAFELY SUPPORTING LOADS SHOWN ON DRAWING S-3.
4	PILING CONTRACTOR SHALL HAVE A MINIMUM OF 5 YEARS OF EXPERIENCE INSTALLING AND MONITORING THE SPECIFIED PILE TYPE

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STEEL

NOTES	
1	ALL STRUCTURAL STEEL SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH THE LATEST AISC CODE. ALL STRUCTURAL STEEL SHALL BE ASTM A588 GRADE 50 WEATHERING STEEL, CORTEN OR EQUAL TO BE APPROVED BY THE OWNER AND ENGINEER.
2	ORIENT ALL MILL CAMBER UPWARD DURING FABRICATION AND ERECTION.
3	ALL BOLTS USED FOR THE ANCHORAGE TO CONCRETE AS SPECIFIED ON THE DRAWINGS SHALL CONFORM TO ASTM F1554.
4	ALL CONNECTIONS SHALL BE BOLTED WITH A MINIMUM OF 3/4" A325N HIGH STRENGTH BOLTS OR WELDED AS DESIGNED BY THE STEEL FABRICATOR.
5	PROVIDE FULL DEPTH DOUBLE ANGLE CONNECTIONS ON ALL GIRDER AND BEAM CONNECTIONS TO COLUMNS. BOLTS SHALL BE AT 3-INCH O/C VERT.
6	FABRICATOR SHALL ADHERE TO ALL OSHA FEDERAL REGISTER STANDARDS SECTION 1926.777 WITH REGARD TO CONNECTION DESIGN.
7	ALL TENSION CONTROLLED BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM F1852 AND F2280.
8	ALL BRACE CONNECTIONS SHALL BE BOLTED WITH A MINIMUM OF 3/4 DIAMETER A325-SC HIGH STRENGTH BOLTS OR WELDED.
9	ALL STEEL WELDING RODS SHALL BE E70XX FOR STEEL CONNECTIONS
10	SUBMIT ALL STEEL SHOP DRAWINGS FOR REVIEW PRIOR TO ANY FABRICATION. SUBMIT CALCULATIONS FOR ALL BRACE CONNECTIONS TO COLUMNS (CALCULATIONS NEED NOT BE SIGNED AND SEALED)

CONCRETE

NOTES	
1	ALL CONCRETE SHALL BE READY-MIX AND PROPORTIONED ON THE BASIS OF LABORATORY TRIAL MIXTURE OR FIELD TEST DATA OR BOTH ACCORDING TO ACI301. DESIGN MIXTURES SHALL MEET THE REQUIREMENTS BELOW:
1.1	FOOTINGS AND FOUNDATION WALLS
	COMPRESSIVE STRENGTH OF 4500 PSI AT 28 DAYS MINIMUM.
	EXPOSURE CATEGORY: F2
2	ALL CONCRETE EXPOSED TO EXTERIOR CONDITIONS SHALL HAVE CHARACTERISTICS IN ACCORDANCE WITH ACI BUILDING CODE (ACI 318) AND THE 2015 INTERNATIONAL BUILDING CODE
3	CONTRACTOR IS RESPONSIBLE FOR THE PREPARATION OF DESIGN MIXTURES FOR EACH APPLICATION/LOCATION USED IN CONSTRUCTION AS NOTED ABOVE AND ON THE DRAWINGS.
4	ALL CONCRETE WORK SHALL COMPLY WITH THE REQUIREMENTS OF THE LATEST EDITIONS OF THE ACI BUILDING CODE (ACI 318), THE ACI DETAILING MANUAL (SP-66), AND THE SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS (ACI 301).
5	ALL REINFORCING STEEL SHALL BE MANUFACTURED FROM HIGH STRENGTH BILLET STEEL CONFORMING TO ASTM DESIGNATION A615 GRADE 60. LAP ALL BARS MINIMUM 48 BAR DIAMETERS UNLESS OTHERWISE NOTED.
6	CONCRETE SHALL ACHIEVE A MINIMUM OF 70 PERCENT OF THE DESIGN STRENGTH PRIOR TO STEEL ERECTION. WRITTEN CONFIRMATION OF THIS STRENGTH SHOULD BE SUBMITTED TO THE ENGINEER OF RECORD PRIOR TO THE COMMENCEMENT OF STEEL ERECTION.
7	SHOP DRAWINGS FOR CONCRETE MIX DESIGNS SHALL INCLUDE THE FOLLOWING INFORMATION:
7.1	MIXTURE IDENTIFICATION BY APPLICATION/LOCATION
7.2	SPECIFIED COMPRESSIVE STRENGTH, f'C, THAT IS APPLICABLE FOR THE APPLICATION
7.3	SPECIFIED EXPOSURE CLASS
7.4	DOCUMENTATION OF STRENGTH TEST RECORDS OF SIMILAR CLASS OF CONCRETE USED TO ESTABLISH STANDARD DEVIATION IN ACCORDANCE WITH ACI 318, WHEN TEST RECORDS EXIST
7.5	REQUIRED AVERAGE COMPRESSIVE STRENGTH, f'CR, FOR EACH CLASS OF CONCRETE
7.6	DOCUMENTATION OF REQUIRED AVERAGE COMPRESSIVE STRENGTH, f'CR, USED AS THE BASIS FOR SELECTION OF CONCRETE PROPORTIONS
7.7	INTENDED PLACEMENT METHOD
7.8	SLUMP OR SLUMP FLOW
7.9	AIR CONTENT
7.10	DRY AND WET DENSITY
7.11	W/C RATIO
7.12	DOCUMENTATION SUPPORTING OTHER SPECIFIED REQUIREMENTS OF CONCRETE MIXTURES
7.13	NOMINAL MAXIMUM AGGREGATE SIZE OR SIZE NUMBER
7.14	TYPE AND INFORMATION ABOUT THE INGREDIENT MATERIALS PROPOSED FOR USE.
8	CONCRETE TESTING SHALL CONFORM TO THE FOLLOWING:
8.1	SAMPLES SHALL BE TAKEN AT LEAST ONCE PER DAY AND ONCE FOR EACH 50cy OR 5000sf OF PLACED CONCRETE
8.2	TAKE SLUMP, AIR, TEMPERATURE FOR EACH CONCRETE CYLINDER SET TAKEN
8.3	CYLINDER TESTS SHALL BE AS FOLLOWS:
8.3.1	TEST ONE SET OF TWO CYLINDERS AT 7 DAYS
8.3.2	TEST ONE SET OF TWO CYLINDERS AT 28 DAYS
8.3.3	TEST ONE SET OF TWO CYLINDERS AT 56 DAYS

TIMBER

NOTES	
1	ALL STRUCTURAL TIMBER FRAMING, WALLS, BLOCKING, ETC SHALL BE HEM FIR #2 MINIMUM, STRESS GRADE LUMBER OR APPROVED EQUAL.
2	ALL STRUCTURAL TIMBER FRAMING SHALL HAVE THE FOLLOWING MINIMUM ALLOWABLE PROPERTIES - Fb = 850 PSI, Fv = 150 PSI, E = 1,300,000 PSI
3	ALL STRUCTURAL TIMBER MUST BE STAMPED IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF TIMBER CONSTRUCTION'S "CONSTRUCTION MANUAL".
4	ALL STRUCTURAL TIMBER MUST BE STAMPED IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF TIMBER CONSTRUCTION'S "CONSTRUCTION MANUAL".
5	ALL TIMBER AND TIMBER CONSTRUCTION SHALL COMPLY WITH LATEST EDITIONS OF THE FOLLOWING STANDARDS:
5.1	AMERICAN INSTITUTE OF TIMBER CONSTRUCTION: TIMBER CONSTRUCTION MANUAL.
5.2	NATIONAL FOREST PRODUCTS ASSOCIATION: NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION.
5.3	AMERICAN WOOD-PRESERVERS ASSOCIATION STANDARDS.
5.4	NATIONAL LUMBER MANUFACTURERS ASSOCIATION: NATIONAL DESIGN SPECIFICATION FOR STRESS-GRADE LUMBER AND ITS FASTENINGS.
6	ALL TIMBER CONNECTIONS SHALL BE MADE USING PREFABRICATED CONNECTORS. TOE-NAILING IS NOT PERMITTED AS THE FINAL CONNECTION UNLESS OTHERWISE APPROVED BY THE ENGINEER. SUBMIT MANUFACTURER'S DATA FOR REVIEW. FASTENERS SHALL BE AS MANUFACTURED BY SIMPSON STRONGTIE OR APPROVED EQUAL.
7	PROVIDE MINIMUM CONTINUOUS SOLID BLOCKING OR CROSS-BRIDGING LINES AT 8'-0" O/C MAX SPACING FOR ALL WOOD JOISTS AND WOOD RAFTERS
8	PROVIDE A MINIMUM OF ONE LINE OF BLOCKING OR CROSS BRIDGING FOR ALL SPANS.
9	TREATED LUMBER SHALL BE PROVIDED AT ALL LOCATIONS WHERE LUMBER IS IN CONTACT WITH CONCRETE AND MASONRY FOUNDATION WALLS OR AT EXTERIOR OF BUILDING.

DATE:	DESCRIPTION:	BY:
7.14.2017	50% SUBMITTAL	PJP
11.2.2017	ISSUED FOR PERMIT	
12.1.2017	ISSUED FOR BID	
3.9.2018	ADDENDUM #1	

DELAWARE'S BAYSHORE BYWAY
LITTLE CREEK BOARDWALK AND
WILDLIFE OBSERVATION TOWER

STRUCTURAL GENERAL NOTES

DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

DESIGNED BY: P2STRENG
DRAWN BY: P2STRENG
BUILDING NO.: N/A
DATE: DECEMBER 1, 2017
SCALE:
SHEET NO.: S-2
DFW PROJECT #: FW-2-15
CONTRACT #: FW-2-15

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